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10/707,099	11/20/2003	Michael Carson	60680-1818	1098

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EXAMINER

SHARP, JEFFREY ANDREW

ART UNIT

PAPER NUMBER

3677

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,099

Applicant(s)

CARSON, MICHAEL

Examiner

Jeffrey Sharp

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

[1] This action is responsive to Applicant's remarks/amendment filed on 09 September 2005 with regard to the Official Office action mailed on 10 June 2005.

Status of Claims

[2] Claims 1-5 and 7-15 are pending.

Claims 6 and 16 are cancelled.

Claim Objections

[3] Claims 9 and 10 were previously objected to because of informalities. Applicant has failed to successfully address these issues in the amendment filed on 09 September 2005. Accordingly, the objection to the claims has not been withdrawn.

Claims 9 and 10 are objected to because of the following informalities:

There is insufficient antecedent basis for the limitation "said outer surface of said generally rectangular projection" in claim 9.

There is insufficient antecedent basis for the limitation "said rectangular projection" in claim 10.

Both claims 9 and 10 depend from claim 7, which makes no reference to a "rectangular projection" or an "outer surface". Only claim 8 suggests a "rectangular projection" having an "outer surface".

Appropriate correction is required.

Response to Arguments/Remarks

[4] Claim(s) 1-5 and 7-15 were previously rejected under 35 U.S.C. 102(b) as being anticipated by Norwood US-Re14,969 (Figure 4) and/or Norwood US-1,404,540.

Applicant has amended the foregoing claim(s) such that the Norwood references no anticipate the limitations disclosed therein. Consequently, upon further consideration, a new ground(s) of rejection necessitated by amendment is made below.

[5] Claim(s) 1-16 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admission of prior art (Figures 1 and 2) in view of any one of: Norwood US-1,404,540, Norwood US-RE14,969, Moore US-1,471,700, Wilson US-1,534,198, Bonsky US-1,557,256, or Norton US-1,586,459.

Applicant's arguments/remarks with regard to this reference have been fully considered, but are not persuasive.

In response to Applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to Applicant's citation of *In re Vaeck*, suggesting that "the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both

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be found in the prior art, not in applicant's disclosure," the Examiner directs Applicant's attention to the words "PRIOR ART" in the instant Figures 1 and 2. Therefore, "the teaching or suggestion to make the claimed combination and the reasonable expectation of success is found in the prior art." See MPEP §2129, which states:

II. DISCUSSION OF PRIOR ART IN SPECIFICATION

Where the specification identifies work done by another as "prior art," the subject matter so identified is treated as admitted prior art. In re Nomiya, 509 F.2d 566, 571, 184 USPQ 607, 611 (CCPA 1975) (holding applicant's labeling of two figures in the application drawings as "prior art" to be an admission that what was pictured was prior art relative to applicant's improvement).

Therefore, Applicant's allegations that the Examiner has attempted to use Applicant's disclosure as a blueprint for a §103 rejection and to provide motivation or suggestion to combine is not persuasive. Examiner has merely used the admitted prior art provided by Applicant to determine and clearly establish the prior art and to clearly point out what appears to be Applicant's alleged improvement over the prior art. The Examiner takes the position that "motivation and/or suggestion to combine" has been clearly demonstrated by only the cited teaching references (i.e., Norwood US-1,404,540, Norwood US-RE14,969, Moore US-1,471,700, Wilson US-1,534,198, Bonsky US-1,557,256, and Norton US-1,586,459), and has not used Applicant's disclosure as a blueprint. It is to be noted that these references suggest or at least make obvious, a "generally rectangular projection extending from an upper surface of the piston ring" for the reasons of providing a better means for 1) captivating oil around the piston ring for lubrication, 2) displacing or reducing internal combustion forces on the lip seal portion of the ring, 3) creating a better surface contact between the piston ring and cylinder, and/or 4)

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preventing oil from further penetration into the combustion chamber. Note that things clearly shown in reference patent drawings qualify as prior art features, even though unexplained by the specification. *In re Mraz*, 173 USPQ 25 (CCPA 1972).

In response to applicant's arguments against the references individually (Remarks, section II), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As for Applicant's assertion that a prima facie case of obviousness has not been established, it is not required that the prior art disclose or suggest the properties newly-discovered by an applicant in order for there to be a prima facie case of obviousness. See *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897, 1905 (Fed. Cir. 1990). Moreover, as long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor. See *In re Beattie*, 974 F.2d 1309, 24 USPQ2d 1040 (Fed. Cir. 1992); *In re Kronig*, 539 F.2d 1300, 190 USPQ 425 (CCPA 1976) and *In re Wilder*, 429 F.2d 447, 166 USPQ 545 (CCPA 1970). The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F. 2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In this regard, a conclusion of obviousness may be based on common knowledge and common sense of the

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person of ordinary skill in the art without any specific hint or suggestion in a particular reference.

In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969).

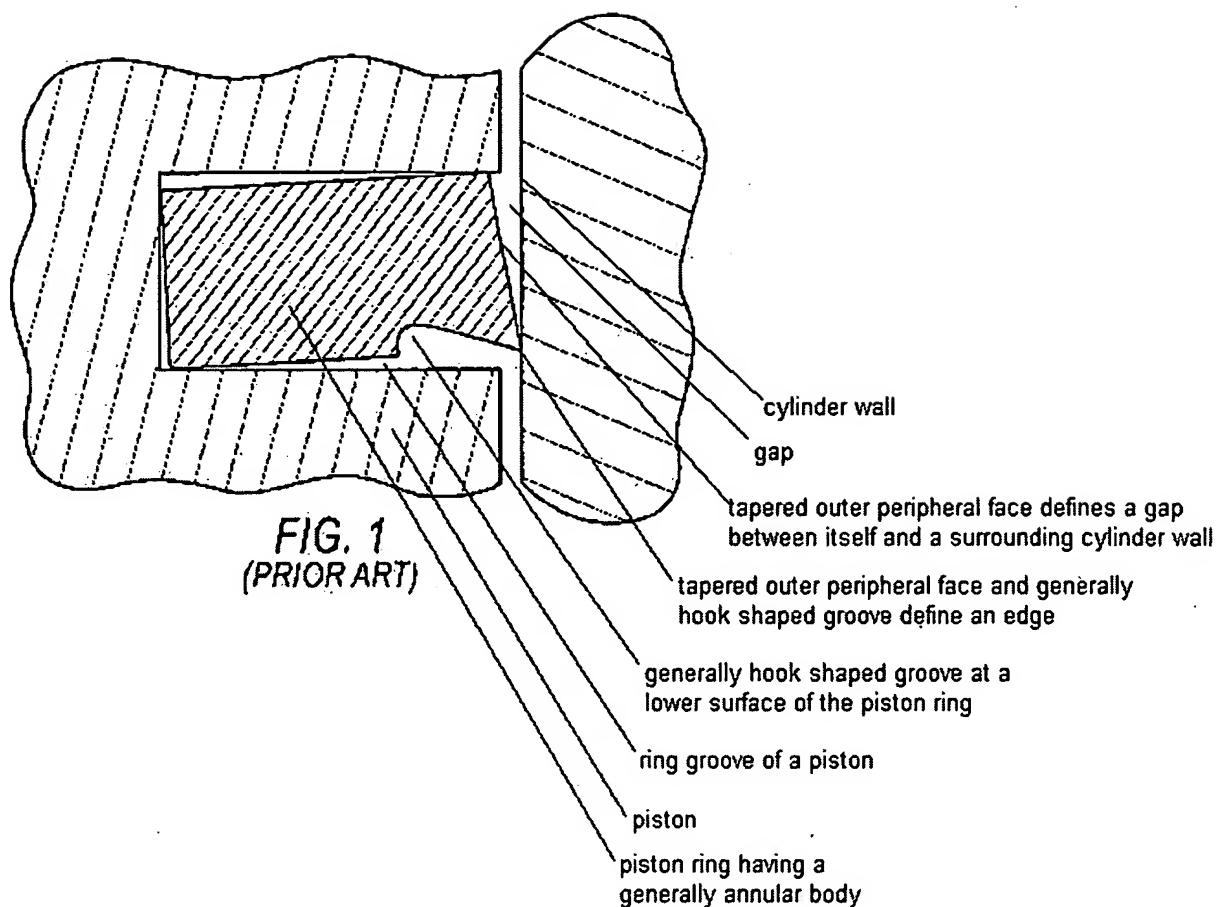
Claim Rejections - 35 USC § 103

[6] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[7] Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admission of prior art (Figure 1) in view of any one of: Norwood US-1,404,540, Norwood US-RE14,969, Moore US-1,471,700, Wilson US-1,534,198, or Norton US-1,586,459.

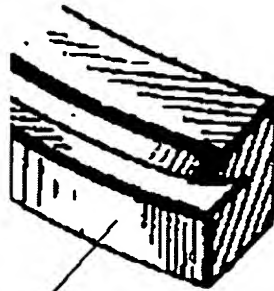
Applicant substantially teaches each and every limitation in claims 1-16. In Figure 1, Applicant admits that the prior art already teaches a piston ring (10) alone and in combination with a piston (24) having seating grooves (26) and cylinder (20); said piston ring (10) having a generally annular body, tapered outer peripheral face (12), and a generally hook-shaped groove (14).



However, Applicant fails to disclose expressly, that the prior art teaches a generally rectangular projection (numeral 116 in the instant application Figures 3, 4, and 5) extending from an upper surface of said piston ring.

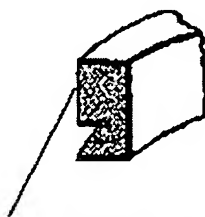
Norwood '540 suggests a rectangular projection (8) extending at an upper surface of the piston ring. An outer surface of the projection (8) is parallel with a surrounding cylinder (5). The projection (8) defines a ledge extending radially from said outer peripheral face (16) and helps minimize the gap (14) caused by the outer peripheral face (16).

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generally rectangular projection having an outer surface parallel to a cylinder wall; said projection extending radially outwardly along an upper surface of a piston ring, and defining a ledge from a tapered outer peripheral face; said projection reducing the gap between said cylinder wall and said piston ring

Norwood '969 suggests a rectangular projection (71,73) extending at an upper surface (top of 5 in Figure 4) of the piston ring (5). An outer surface (73) of the projection is parallel with a surrounding cylinder (1). The projection (71,73) defines a ledge extending radially from said outer peripheral face (7) and helps minimize the gap caused by the outer peripheral face (7).



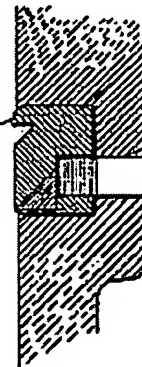
generally rectangular projection having an outer surface parallel to a cylinder wall; said projection extending radially outwardly along an upper surface of a piston ring, and defining a ledge from a tapered outer peripheral face; said projection reducing the gap between said cylinder wall and said piston ring

Moore suggests a rectangular projection (above 3) extending at an upper surface of the piston ring (1). An outer surface of the projection is parallel with a surrounding cylinder

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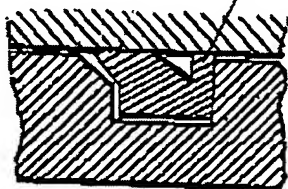
adjacent the piston (6). The projection defines a ledge extending radially from said outer peripheral face (tapered wall of 3) and helps minimize the gap caused by the outer peripheral face.

generally rectangular projection having an outer surface parallel to a cylinder wall; said projection extending radially outwardly along an upper surface of a piston ring, and defining a ledge from a tapered outer peripheral face; said projection reducing the gap between said cylinder wall and said piston ring



Wilson suggests a rectangular projection extending at an upper surface of the piston ring (R). An outer surface of the projection is parallel with a surrounding cylinder (B). The projection defines a ledge extending radially from said outer peripheral face (6) and helps minimize the gap caused by the outer peripheral face (6).

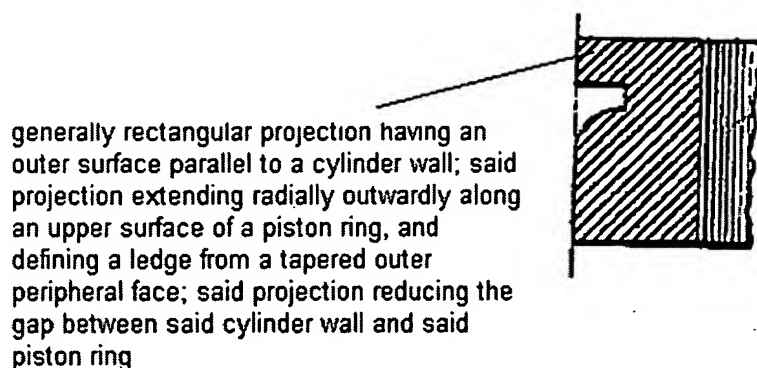
generally rectangular projection having an outer surface parallel to a cylinder wall; said projection extending radially outwardly along an upper surface of a piston ring, and defining a ledge from a tapered outer peripheral face; said projection reducing the gap between said cylinder wall and said piston ring



Norton suggests a rectangular projection (15) extending at an upper surface (top of 12) of the piston ring (12). An outer surface of the projection (15) is parallel with a surrounding

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cylinder (10). The projection (15) defines a ledge extending radially from said outer peripheral face (17) and helps minimize the gap caused by the outer peripheral face (17).



At the time of invention, it would have been obvious to one of ordinary skill in the art, to modify the prior art piston ring admitted by Applicant in Figure 1, by employing a "generally rectangular" projection extending from an upper surface as suggested by all of the abovementioned references, in order to provide an improved means for: 1) captivating oil around the piston ring for lubrication, 2) displacing or reducing internal combustion forces on the lip seal portion of the ring, 3) creating a better surface contact between the piston ring and cylinder, 4) preventing oil from further penetration into the combustion chamber, 5) reducing vibration or rattling of the piston ring by creating a more even surface contact, 6) increasing piston efficiency, 7) increasing friction between the piston and cylinder wall, and/or 8) creating a fluid bearing "seal" between the piston and cylinder wall by creating an annular peripheral "pocket". Note that a change in the shape of a prior art device is a design consideration within the skill of the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1996).

New Grounds of Rejection

Claim Rejections - 35 USC § 102

- [8] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

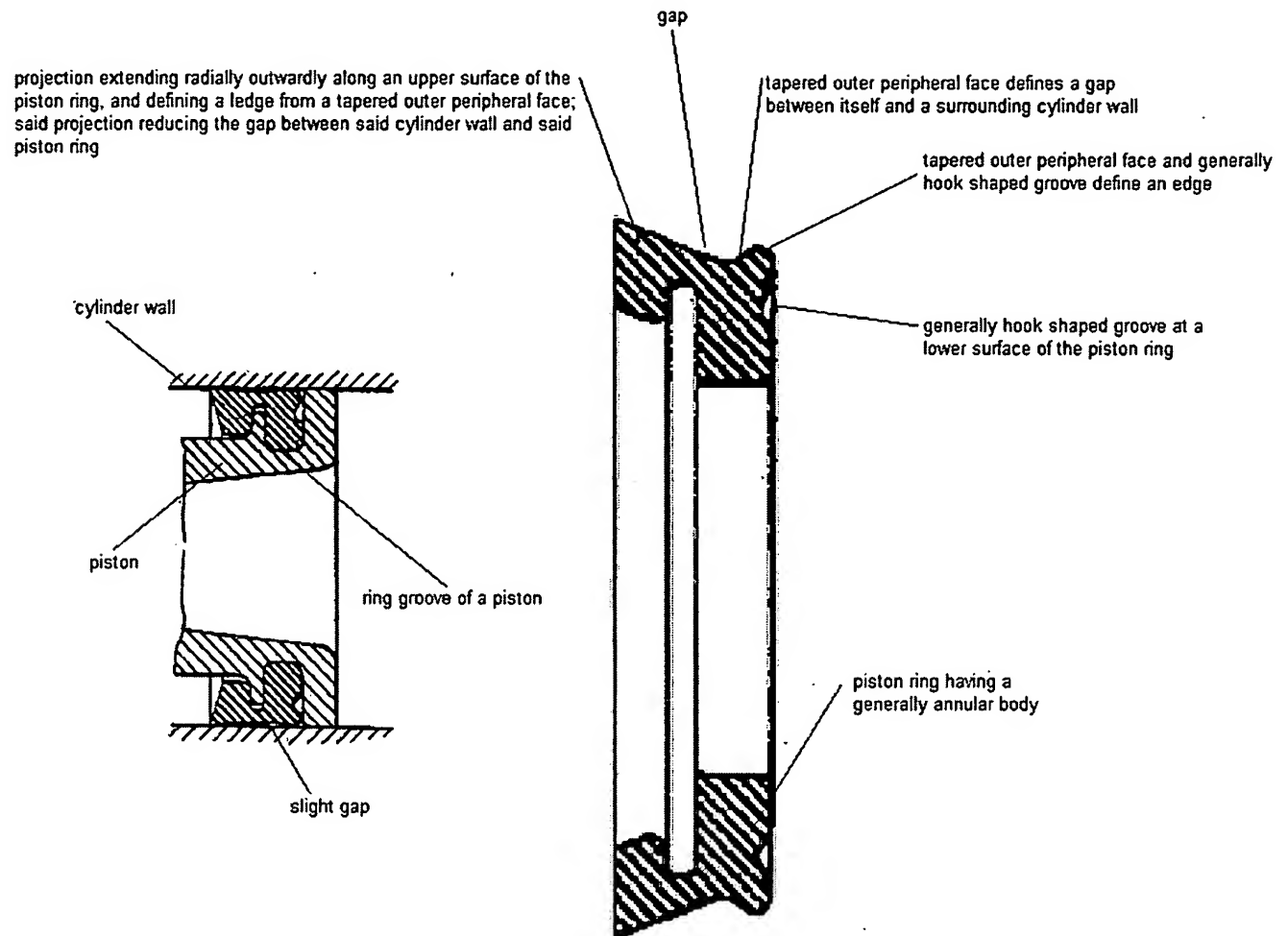
- [9] Claims 1-5, 7, 11, 13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gosling US-2,340,466 (previously cited on PTO-892).

In short, Gosling teaches a piston ring and assembly (refer to figure below) comprising:

a piston ring having a generally annular body having a tapered outer peripheral face defining a gap and an edge, a generally hook shaped groove on a lower surface, and a radially outwardly extending projection forming a ledge and being provided at a top surface of said piston ring, wherein said groove also forms said edge;

a piston having a ring groove adapted to receive said piston ring; and

a cylinder wall that receives said piston with said piston ring substantially being positioned between the two.



Claim Rejections - 35 USC § 103

[10] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[11] Claims 8-10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gosling US-2,340,466 in view of any one of: Norwood US-1,404,540, Norwood US-RE14,969, Moore US-1,471,700, Wilson US-1,534,198, or Norton US-1,586,459 for the same reasons discussed above.

In short, Gosling discloses a piston ring and assembly having each and every limitation in claims 1-5, 7, 11, 13, and 15 as discussed above. Although Gosling suggests both a trapezoidal projection on page 2 col. 1 line 20, and a more "generally rectangular projection" on page 2 col. 1 lines 56-70, he also suggests that "it will be appreciated that various modifications can be made in the shape and construction" (page 2 col. 1 lines 71-72).

However, Gosling fails to disclose expressly, a "generally rectangular" projection having an outer surface substantially parallel to the cylinder wall.

Each of Norwood '540, Norwood '969, Moore '700, Wilson '198, and Norton '459 suggest a generally rectangular projection extending at an upper surface of the piston ring. An outer surface of the projection is parallel with a surrounding cylinder. The projection defines a ledge extending radially from said outer peripheral face and helps minimize the gap caused by the outer peripheral face. For the sake of avoiding redundancy, refer to above rejection for details.

At the time of invention, it would have been obvious to one of ordinary skill in the art, to modify the shape of the piston ring projection taught by Gosling, to be of "generally rectangular" shape as suggested by all of the abovementioned references, in order to provide an improved means for: 1) captivating oil around the piston ring for lubrication, 2) displacing or reducing internal combustion forces on the lip seal portion of the ring, 3) creating a better surface

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contact between the piston ring and cylinder, 4) preventing oil from further penetration into the combustion chamber, 5) reducing vibration or rattling of the piston ring by creating a more even surface contact, 6) increasing piston efficiency, 7) increasing friction between the piston and cylinder wall, and/or 8) creating a fluid bearing "seal" between the piston and cylinder wall by creating an annular peripheral "pocket".

Note that a change in the shape of a prior art device is a design consideration within the skill of the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1996).

Conclusion

[12] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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[13] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sharp whose telephone number is (571) 272-7074. The examiner can normally be reached 7:00 am - 5:30 pm Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached on (571) 272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAS


ROBERT J. SANDY
PRIMARY EXAMINER